Name: Date:

Calculus Review for Q2 Test 1

This review sheet should NOT serve as your only review. Be sure to review your notes and homework as well.

1. An object moves along a line so that its position at time *t* is given by  where  .
   1. What is the object’s position at time *t* = 3?
   2. What is the object’s velocity at time *t* = 3?
   3. What is the object’s acceleration at time *t* = 3?
   4. Is the object speeding up or slowing down at *t* = 3? Justify your response.
   5. When is the object at rest?
   6. When is the object moving right?
   7. How far does the object travel in the first 4 seconds?
2. An object moves along a line so that its position at time *t* is given by  where  .
   1. What is the object’s position at time *t* = 3?
   2. What is the object’s velocity at time *t* = 3?
   3. What is the object’s acceleration at time *t* = 3?
   4. Is the object speeding up or slowing down at *t* = 3? Justify your response.
   5. When is the object at rest?
   6. When is the object moving left?
   7. How far does the object travel in the first 4 seconds?
3. Differentiate each of the following with respect to *x*.
   1. 
   2. 

c. 

d. 

e. 

f. 

g. 

h. 

1. Write an equation for the line tangent to  when . (Round all values to the nearest thousandth.)
2. Write an equation for the line tangent to  when . (Round all values to the nearest thousandth.)
3. Suppose the position equation for a moving object is where s(*t*) is measured in meters and *t* is measured in seconds. Find the velocity of the object when .